

those with single-vessel ischaemia, which together encompass the vast majority of patients studied, is very small. In a study that included over 5000 patients undergoing SE, those with normal results and those with single-vessel territory ischaemia had similar survival rates (99%) within the first year.³

This brings us to the question of whether the paradigm of functional testing alone is adequate or whether we need to define the coronary anatomy. Although coronary imaging with CMR has been studied, MDCT is clearly the modality that could seriously challenge the current paradigm. Clearly, MDCT has a superior negative predictive value; thus, a negative MDCT virtually excludes the presence of anatomical coronary artery disease. In addition, MDCT potentially excludes other important causes of chest pain such as pneumothorax, dissection, oesophageal pathology or large pulmonary embolism, making it very attractive as a diagnostic test in this setting. As discussed by the authors, MDCT has limitations—in particular, its reduced ability to visualise the coronary lumen in the presence of extensive coronary calcifications or stents.⁴ The radiation exposure with current systems also raises concern about its indiscriminate use in younger, low-risk patients. I therefore agree with the authors in their recommendation of using MDCT as a secondary test for patients with equivocal stress test results. However, technological advances are being implemented at a much faster speed with this technology than with any other imaging modality. Compared with 16-slice MDCT, current 64-slice MDCT systems reduce acquisition time and lower the number of non-evaluable segments. With the implementation of prospective triggered acquisition, some 64-detector systems have recently shown the feasibility of performing CA with only 2–4 mSv of radiation exposure. Prototype units with 256-slice MDCT systems are already under clinical investigation. Therefore, I believe that current recommendations will need to be revised much sooner than 3 years from now. I anticipate that eventually MDCT will prove to be equivalent or even superior to stress testing as a first-line test, particularly in patients with low–intermediate risk, given its higher negative predictive value. MDCT has the unique advantage of being able to establish the presence of coronary artery disease at an earlier stage compared with any other non-invasive imaging modality.

It is difficult to forecast how rapid the growth of CMR will be in the next few years. The costs of the equipment, installation and maintenance, and the more difficult implementation of

exercise protocols are in balance with the higher spatial resolution of CMR, when compared with SE and MPS. However, CMR will experience significant growth in the future once anatomic coronary imaging is performed reliably with this modality. The use of harmonic imaging, real-time 3D and contrast will likely continue to improve the image quality and ease of acquisition with SE. Newer high-sensitivity gamma detector systems are now close to commercialisation. These small footprint systems significantly reduce radiation exposure and acquisition time during MPS. Thus, CMR, SE and MPS will remain in close competition for functional imaging. Meanwhile, MDCT is at a clear advantage for anatomic coronary imaging at the present time. Accordingly, I differ with the authors' opinion and predict that the number of new MDCT system installations in the UK will actually exceed the number of installations of new CMR systems over the next 10 years.

Having ETT, SE, MPS, CMR and MDCT to choose from is, to the practicing clinician, similar to approaching a fork in the road. Yogi Berra once said, "If you come to a fork in the road, take it." However, in healthcare we cannot afford to just "take the fork" and perform every test in every patient. For this reason, we share the vision of the authors regarding the establishment of a non-invasive cardiac imaging track in cardiology training. We anticipate that the future multi-modality cardiovascular imaging experts will serve the role of consultants, helping in determining which is the most appropriate test for a given patient in a given clinical circumstance to reach the most accurate and complete diagnosis, ultimately providing better patient care.

Competing interests: None declared.

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